INFORMATION SERVICE

Published Weekly, Except During July and August, by the

DEPARTMENT OF RESEARCH AND EDUCATION
FEDERAL COUNCIL OF THE CHURCHES OF CHRIST IN AMERICA
297 FOURTH AVENUE, NEW YORK 10, N. Y.

Duke University Library
OCT 29 1945

Price $2.00 Per Year—Single copies this issue 5 cents. Volume XXIV, No. 34

The Federal Council of the Churches of Christ in America is a federation of twenty-five national religious bodies through which they are rendering united service. Articles appearing herein furnish information on current issues and are not to be construed as declarations of official attitudes or policies of the Federal Council of Churches.

Entered as second-class matter January 4, 1924, at the Post Office at New York, under the act of March 3, 1879.

The Atom Bomb and the Future

Since the atomic bomb exploded over Hiroshima much argument has been heard over the grave questions that it has raised. It should be possible now to define the issues more clearly and summarize the main contentions that have been put forward.

No attempt will be made in this discussion to answer technical questions about the atomic bomb. An explanation of the processes involved in nuclear fission, together with a historical account of the developments leading to the production of the bomb will be found in an authorized report.[1] Although completed before the actual demonstration of the bomb last July, the writer was able confidently to assert: "A weapon has been developed that is potentially destructive beyond the wildest nightmares of the imagination; a weapon so ideally suited to sudden unannounced attack that a country's major cities might be destroyed overnight by an ostensibly friendly power." It is now evident that the scientists who were engaged in the project had a terrifying sense of its possibilities. It is the realization of something that has been for many years theoretically possible—the transformation of matter into energy with great explosive force but under controlled conditions. The formula for it was given in 1905 by Einstein: the energy equivalent to a given mass is equal to that mass multiplied by the square of the velocity of light! This means that a single kilogram (2.2 pounds) of matter, if it could be entirely converted into energy, would yield the equivalent of that generated by the entire electric power industry in this country in 1939 in about two months' time.

At present, the now famous "chain reaction," by which "slow neutrons" produce fission in the uranium atom (i.e., the "isotope" U-235) is of limited application. It is not known how many other elements may ultimately prove to be capable of nuclear reactions that will release energy in enormous amounts. Thorium is a demonstrated possibility. Thus far methods of control have been developed only for reactions involving fission. But already scientists entertain the possibility that controlled atomic disintegration with release of energy may be extended to elements much more plentiful than uranium and thorium. The "splitting" of an atom may release energy or it may absorb it. The earlier years of experimentation involved great expenditure of energy. But it is not unreasonable to suppose that even the staggering achievement last summer, utilizing as it did but one one-thousandth of the energy in the elements used, is but a curtain-raiser for the drama that awaits us. Even if uranium and thorium alone are considered, there is enough of them to produce incalculable destruction. The earth's crust contains four parts per million of uranium and twelve parts per million of thorium. Also, they are widely distributed. There are deposits of uranium in Colorado, in northern Canada, in Czechoslovakia, the Belgian Congo, and in other regions where their extent is as yet unexplored. It has been estimated, though this is now thought somewhat extravagant, that there is enough nuclear energy in the known uranium deposits to supply all the power needs of the United States for 200 years. Thorium is less widely distributed, and is less abundant in this country than in Brazil and British India. It is evident that man, in the persons of a group of scientists, has taken another, and this time a huge, bite of the fruit of the Tree of Knowledge. The observation of H. G. Wells is ominous: "In the case of every other predominant animal the world has ever seen, the hour of its complete ascendancy has been the eve of its entire overthrow."

It is true that the magnitude of the destructive power thus made available is also the measure of the potentiality within it of benefit to mankind. It is reasonable to assume that if the war had not put a premium on the finding of a "super-lethal" weapon, the exploration of atomic energy would have taken a course dictated by the uses of peace. It seems no exaggeration to say, as is being widely said, that we are entering upon a new age of power, the atomic age. The bomb is a symbol of this transition. What is happening is not the result of the bomb, but that engine of destruction has given a new aspect to the production of energy in the modern world.

The Morality of Atomic Bombing

From an ethical point of view the bombing of Hiroshima, and especially of Nagasaki, poses an issue that will not down. That issue has two distinct aspects. First, there is the question, not yet answered in the highest official circles, why a demonstration of the bomb was not made in some relatively unoccupied area of Japan, accompanied by an ultimatum concerning its use upon Japanese cities. It is argued that this could not have prolonged the war by more than a few days, since a refusal by the Japanese government to capitulate in the face of so dire a threat would have been followed by the kind of attack that was actually carried out without specific warning. There are reports, which it would seem should be dis-

[1] *Atomic Energy for Military Purposes*—the Official Report on the Development of the Atomic Bomb under the Auspices of the United States Government, 1940-1945. By Henry DeWolf Smyth, Chairman, Department of Physics, Princeton University. Princeton, Princeton University Press, 1945. $2.00.

XUM

proved if untrue, that the bombing of Nagasaki was primarily a military experiment, and that the attack on the two cities without such a relatively innocuous demonstration as above suggested was contrary to the urgent request of the scientists engaged in the project. Major General Groves, who was in charge of the atom bomb project, was quoted in the press as saying that a warning demonstration to the Japanese was considered and ruled out because it would have eliminated the element of surprise. "The Japanese could have steeled themselves against it." Also, they "would have made a big propaganda in this country against it." They might even have found a way to stop it, "perhaps shooting down the plane." On its face, this statement suggests that only a demonstration with huge slaughter would have satisfied the Army, which is the principle on which terror bombing rests. It should be noted that these remarks were made in an interview and not in a prepared statement.

More fundamental, perhaps, is the question whether air warfare has not progressively degenerated into indiscriminate attack, with the atomic bomb merely climaxing the gradual substitution of obliteration bombing which at the outset was regarded as a peculiarly satanic device of the Nazis and the Fascists. In Protestant circles moral judgment on this point is sharply divided. One group is disposed to regard the stepping up of air attack as inevitable in the nature of the new warfare, which increasingly blurs the distinction between combatants and non-combatants. From this point of view the issue is merely another form of the question whether or not the war was justified. If we willed the war, it is said, we must not balk at the means necessary to win the kind of struggle that modern war has become. Today there are many who have wholeheartedly supported the war who nevertheless believe that it could have been won without the mass slaughter of civilians. It is disturbing now to recall our solemn pledge not to use poison gas unless it should be used against us by our enemies. Such considerations do not supply an answer convincing to those who say that war is at best a rough business and who point to the assumed fact that the obliteration bombing, and particularly the atomic bomb, greatly hastened the end of the war and saved many hundred thousands of lives on both sides. It must be noted that this assumption is rendered doubtful by the subsequent reports of Japan's condition of war collapse. Admiral Nimitz has declared that Japan was defeated before the bomb was used. In any case, the question intrudes itself what we should have said if the Nazis had used the bomb on London and New York.

The other group finds no difficulty in reaching a moral decision that condemns the bombing of Hiroshima and Nagasaki as atrocities of the first magnitude and, by implication, condemns all obliteration bombing. Norman Thomas has said that "the Japanese have to forgive two atomic bombs the second of which at least was about the most inexcusable thing in the long history of this war's atrocities." In England the Bishop of Rochester has asked, "Are we going to hang Germans for doing what we ourselves have done so very much better than they?" To be sure, many of those who hold this position were against the war on moral grounds in the first place. The gravamen of their charge against the bombing strategy is therefore that what has happened merely documents what they maintained from the beginning—that war is an unmitigated evil. But those who condemn these extreme methods of air warfare on non-pacifist ground have the task of defining a principle by which to distinguish justifiable from non-justifiable forms of bombing. This is a problem that has long troubled earnest Christians.

The only approach to a definitive principle that emerges is one that distinguishes between direct and indirect, between purposeful and incidental, destruction of non-combatants. Many Catholic thinkers—not all—find it possible to reach a conclusive judgment on the issue by invoking the natural moral law, which they find sufficiently specific for the purpose. When 34 non-Catholic clergymen promulgated a statement condemning the use of the atomic bomb, Father James M. Gillis, C.S.P., in his widely printed column in the Catholic press contrasted the basis of their judgment with that of the condemnation pronounced by Catholic journals. "Why not," he asked, "stick to the essential moral problem—is it or is it not ethically right to bomb civilian populations, directly and intentionally? On that question the signers of the document and those who objected to their action were about equally vague. It is one more sign that the science of ethics is in some unexpected quarters virtually unknown."

But since applying in total war the distinction between civilians and non-civilians means, at the outset, classifying an indefinite proportion of the civilian population as combatant the task of arriving at a moral judgment is enormously difficult. If a factory engaged in war production—a category that in this war was indefinitely extensible—is a legitimate military objective, then civilian destruction on a considerable scale is accomplished even in "precision" bombing. All of which indicates that it is increasingly difficult to state and maintain any ethical principle applicable to the *means* of warfare. The atomic bomb has served to make this crystal clear.

What Effect on War and Peace?

Much has been written about the effect of the new weapon on warfare. Up to this moment it appears that if one nation or stable alliance of nations possessed the weapon and others continued to be without it the preponderance of offensive power that it gives would make the result of a war a foregone conclusion. However, military history is as full of surprises in defensive weapons as in those of offense. Radar is the outstanding example in the war just ended. As Lyman Bryson of C.B.S. has said, "the inventions of new weapons of offense lead to new forms of defense, which almost keep up with them—almost, but not quite." Our military authorities are talking about discoveries already made or in the offing which will make protection against the bomb a possibility. The preponderance of evidence, however, indicates that no adequate defense is known at the present time. The scientists who are most familiar with it are of this opinion and some of them have rebuked the military men for holding out false hopes. The bombs to be developed will dwarf those already demonstrated. If used on a substantial scale, even though only one of the units employed should get through, the others being intercepted, it would suffice to annihilate a national capital and the entire machinery of the central government.

The possibility of detonating the bomb by radio would invite its clandestine use through secret agents before hostilities had ostensibly opened, substituting for a declaration of war the pulverizing of the cities and major industries of the country attacked. Professor Reuben Gustavson of Chicago University, one of our most eminent scientists, has declared: "It is altogether possible that relatively small numbers of workers in a small country, such as Denmark, could develop all the facilities which are necessary without a single bomber. With only a runway, a rocket, and an atomic bomb a man in Copenhagen might be able to destroy Berlin."

A melancholy consideration is the fact, not yet widely noted, that the more democratic a country is the more vulnerable it will be to atomic attack. We have proved that a democracy can make war effectively, but a nation that must in time of peace be continually on guard against unheralded catastrophe from without can scarcely indulge its passion for the freedoms in which democracy consists.

This does not mean that some more or less successful defensive measures may not be found. But the fact remains that from the military point of view the best defense is *attack*. All signs point to this conclusion in the matter of strategy. The notion that mere terror of the bomb will prevent its development has little to support it in history. The record of air, sea and land warfare points in the other direction. Fear on the part of military establishments has the effect of accelerating offense as well as defense. The spectacle of the recent London Conference did not precisely support the idea that the potential threat of the bomb is a great impetus toward the making of peace. Whether fear on the part of the peoples of the world who pay the cost of war in lives and treasure will have a deterring effect remains to be seen.

It has been proposed that the atom bomb be "outlawed." The difficulty in achieving this is, of course, documented in the history of warfare. Reinhold Niebuhr has remarked, "Any system of outlawry would only guarantee that the bomb would not be used at the beginning of a major war. It would certainly not secure us against its use before the war was finished."

It has also been proposed that the bomb be capitalized militarily as an international weapon. *The New Statesman and Nation* (London) expressed the opinion some weeks ago that if the United Nations Organization is given a monopoly of it, and "control both of manufacture and raw material supplies entrusted to the sole responsibility of a new model Combined Chiefs of Staff, with adequate international forces to protect the plant, it will be seen that most of the present armaments of the world are out of date." War will then "begin to look like a nightmare of the past." Such a consummation looks remote at this time.

"Keeping the Secret"

The extended discussion of national policy with reference to the knowledge our scientists acquired on the atomic bomb project seems to justify certain generalizations:

1. The "secret" concerns chiefly the processes of manufacture of the bomb, not the scientific principles involved. Russian scientists have been credited with the best account of the chain reaction up to the time it was written. It is therefore scarcely accurate to speak of *the* secret of the bomb. What might properly be so designated is now known throughout the scientific world. On the other hand some of the essential facts concerning the production of the bomb are understood to be unknown even to the British and Canadian governments.

2. It follows that other nations may be expected to put themselves in position to make atomic bombs within a comparatively short time. A period of from three to five years is commonly mentioned in informed circles. The expense involved would be but a fraction of the two billion dollars our government put into the project. Because time was of the essence alternative experimental processes which would ordinarily have been undertaken in sequence were pursued simultaneously at great cost. It is quite conceivable that even some of the smaller nations will find themselves able in the not very distant future to produce atomic bombs.

3. The question becomes, then, one of internal strategy. Should we, with Great Britain and Canada, maintain exclusive possession of the essential information until satisfactory international commitments are secured respecting the control of military use of atomic energy, or make it known to our erstwhile allies without delay? The crux of the matter is, of course, whether or not the information should be given to the Soviet Union.

The President adheres to the position that no disclosures of information should be made until a satisfactory basis of control is internationally agreed upon. Preponderant popular opinion seems to support that view. The issue here, however, is regarded by many as a grave one. If it may be assumed that no nation will have any use for the bomb for a period of years possession of it by ourselves obviously gives less bargaining power to our government than would have been the case a few years ago, so far as military considerations go. To use the bomb as a military threat against Russia might be approved by a minority of our people, but there is no evidence that more than a small minority would favor it. Conceivably the Russian government, which continues to be very suspicious of American intentions, might prefer to await its own scientific development of atomic energy rather than to enter into international commitments concerning the bomb. The question therefore arises whether retention by our government of vital information on the subject may fail to induce an adequate international agreement and may actually engender hostility on the part of the Soviet Union. A remark by Mr. Gustavson is relevant here: "If the United States tries to sit on this secret, it will make itself the most hated power on earth. But we cannot sit on this secret." Raymond Swing, who contends for the conditional release of the secret information has said: "At the present time, the Soviet Union sees us in possession of a weapon which we don't give to them, the secret of which we don't share with them. If the people in the Soviet Union are now afraid of us and sense our using our power against them, then I think they are only acting as we would act in their place." He thinks the President's announced intention to keep the atomic bomb secret has "definitely put us into atomic competition with the Soviet Union."

The London *Economist* has no doubts on this point: "The decision to withhold the secret has immediately reinforced Russian isolationism and will do so still further. . . . We shall now see every effort directed in Russia to the elaboration of atomic weapons behind a heavier and heavier veil of secrecy. There are already signs of greater isolationism. They will increase." The *Economist* thinks a case can be made for "a policy of genuinely trustful cooperation."

Walter Lippmann contends that discussion of keeping the secret is beside the point, since it cannot be kept, and that "the safest course is to guard against its becoming a secret anywhere." Making the essential facts "the common property of the scientific world" will make the scientists themselves "the detectives and inspectors of the control." This, too, of course, would require international agreement, since the decision would rest with governments.

What Does Control Involve?

When the problem of controlling the military use of atomic energy is tackled practical difficulties of great magnitude appear. Expert opinion links military and non-military atomic research closely together. The obvious inference is that control of the one involves control of the other. This is the view taken in the President's

XUM

message on the subject and embodied in the pending legislation. The resulting problem has two major aspects, the one international and the other domestic.

The international aspect of control involves the assumption of authority by an intergovernmental agency to maintain rigid inspection of all research and experimentation in the utilization of atomic energy. Two sharply diverging opinions are held with reference to the political requirements. One group would entrust the task, sooner or later, to the United Nations Organization, even though recognizing that the exercise of such control runs beyond any grant of powers now given to it. This proposal revives the issue of the veto held by each of the big powers in the Security Council. Those who support the proposal see great difficulties ahead but they believe that the only hopeful course is to build on the foundations already laid. The other group holds that the atomic bomb has outmoded the U.N.O. in respect to military controls and that a fresh approach is needed. As Norman Cousins has put it, control requires power, power requires law, and law requires government. Obviously, nothing approximating world government, with power to deal directly with individuals and corporate groups, is envisaged in the Charter. The two groups tend to agree that *ultimately* there must be a powerful world authority to control atomic energy, but they differ on immediate strategy.

The domestic aspect of the problem also assumes great proportions, and even revolutionary implications, when the wide range of anticipated use of atomic energy is considered. This fact was recognized in the President's message. He called for legislation fixing "a policy with respect to our existing plants, and to control all sources of atomic energy and all activities connected with its development and use in the United States." The commission he proposed would "conduct all necessary research, experimentation, and operations for the further development and use of atomic energy for military, industrial, scientific or medical purposes." All this, he said, "may seem drastic and far-reaching," but the situation is too dangerous to "fit into any of our usual concepts." The May bill, "The Atomic Energy Act of 1945," implements these purposes.

The question is already being asked whether such extensive federal controls can be applied within the framework of our economic system. To the extent that the development of atomic energy under public auspices puts a strain on free enterprise it may conceivably be retarded in the interest of enterprises not so restricted, and thus scientific and technological progress may be slowed down. On the other hand, there looms the possibility of an unprecedented development of public enterprise in the economic sphere. Would such development be on democratic lines or the reverse? The pending bill, now before the House Military Affairs Committee, would create a nine-man commission appointed by the President with the consent of the Senate, with power over atomic materials, research and development. Arthur Krock has characterized the powers that would be given to the Commission in these words: "The Commission is directed to follow a policy of minimum interference with private research and enterprise, but it is given plenary power over both in any activity that is in, or in its opinion may possibly enter, the remote neighborhood of any element of atomic energy." The bill, he says, "discloses the first effects of the atomic bomb on American democracy and the free enterprise system." Raymond Swing is quoted in the press as warning that by its terms "control is vested in a way that might become a perfected fascist domination of our economic life. Certainly there is nothing in the bill to prevent it; there is everything to encourage it." He sees nothing "to prevent the nine commissioners from being in fact representatives of nine vast corporations."

The New York *Times* has remarked editorially: "If it turns out that control of atomic energy is impossible without imposing an intolerable restriction on the advance of science and on freedom of scientific expression, there is nothing for it but to consider the abolition of war itself more realistically than it has ever been considered in the past."

Some Conclusions

Without indulging in speculation we may draw certain inferences from the facts thus far made known.

1. The atomic bomb has so stepped up the business of modern warfare, and has opened up such a terrifying vista of possibilities now only dimly foreshadowed, that the prevention of war acquires a new urgency. The outlawing of the atomic bomb is theoretically possible, but history furnishes no convincing precedent as to the humanizing of the means of war. Poison gas was never out of the range of apprehension in World War II, and it can hardly be contended that it is as terrible as the atomic bomb, which the nation we regard as the most democratic in the world brought into use.

2. Atomic energy has been ushered into the world with promise of greater changes than the Industrial Revolution has brought. It makes inevitable the rethinking of the organization of economic life. This does not mean that the economic system that has prevailed in the western world will be displaced, but it does mean that fundamental issues of economic and political philosophy have been sharpened in a peculiarly urgent way.

3. The modern tendency to regard science as a way of life has suffered a rude check. This is impressively and dramatically shown in the fact that our scientists themselves are the ones who are now speaking with the most authentic moral voice in appealing to the conscience of the nation. They know, if others do not, that science can serve mankind only if the laboratory is subject to high moral controls. Whether this mood will communicate itself to a public enamored of the assumed omnipotence of science remains to be seen.

4. We face the sobering fact that we have entered into a heritage of power which we have developed no capacity to administer—a power which renders obsolete the political and cultural controls upon which we have depended for keeping human acquisitiveness and vindictiveness in check. It is now becoming clear that such power knows no restraint except inner restraint. The crisis in which we stand is a moral crisis. As Hanson Baldwin has said, our problem "is not the control of the atomic bomb. It is the control of power in itself and of the nature of man." Or as the Executive Committee of the Federal Council of Churches has put it, "Our blindness and self-will as nations and individuals, not the knowledge of atomic energy, are the true cause of our present peril. Only through repentance and regeneration can we hope to overcome the peril we have created."

Books on Atomic Energy

Since the above article was written David Dietz's book *Atomic Energy in the Coming Era* has come from the press (New York, Dodd, Mead and Co., $2.00). It is written in non-technical language and is a valuable supplement to the *Official Report* cited. *The Atomic Age Opens* (New York, Pocket Books, Inc., 25 cents) is a compilation of materials drawn from a variety of sources, containing much information on the subject.

Printed in U.S.A.